

ACLS FACILITIES PROVIDE ALL-WEATHER OPERATIONAL CAPABILITIES



The Automatic Carrier Landing Systems (ACLS) Facility of the Naval Aviation Systems Team in St. Inigoes, Maryland, has the Cradle-to-Grave responsibility for air traffic control and landing systems used onboard carriers, amphibious assault ships and Marine Corp expeditionary airfields. A part of this facility is located at the approach to runway 32 at Patuxent River, Maryland, which provides a unique flight test capability. This facility provides the ability to correlate airborne data, ground system data, and independent tracking data for flight test analysis. The facility assures that these landing systems provide safe and reliable approach and landing guidance to all shipboard and expeditionary aircraft in all weather and sea state conditions. The facility supports the development and testing of current and future systems, new and modified hardware and software, and the development of both ground and airborne control systems. The team provides fleet support of shipboard systems as well as the shorebased fleet training sites located as NAS Oceana, NAS Cecil Field, NAS Miramar, NAS Lemoore and NAS Whidley Island. This facility represents some 37 years of sustained, gradual growth as military Air Traffic Control and Landing Systems evolved in the fleet.

ACLS FACILITY SUPPORTS EVOLVING SYSTEM AND EXISTING FLEET INTEGRITY

The facility provides research, development, test and evaluation, installation guidance, logistic life cycle support, software development support, fleet technical assistance “hot line” and training, fleet certification, and depot repair support for Navy and Marine Corp Air Traffic Control systems. The Navy systems constitute electronic aids for all weather and night operations onboard aircraft carriers and amphibious assault ships. The Marine Corp subsystems provide around the clock, all-weather air traffic control and automatic precision approach and landing recovery of tactical aircraft at forward expeditionary airfields.

The facility provides a full spectrum of technical and logistics support, including engineering design and development; specification development, tradeoff studies; developmental test and evaluation including test plans, procedures, and test execution; software test and evaluation; algorithm development; certification procedure development



and certifications; training and assistance for field certifications; data acquisition and reduction software development to support in-house testing; operational test and evaluation; and training course development. There are installed and maintained equipment test beds for engineering development and testing. Complete testing of the Navy's Automatic Carrier Landing System requires location of the test bed adjacent to an active runway. The AN/SPN-42 Landing Control Central and AN/SPN-46 Automatic Carrier Landing systems test beds, located at Patuxent River are sited so as to enable them to control aircraft to low approaches to runways 6, 14, and 32.



The facility is currently involved with the development and testing for the Product Improvement Program (PIP), Precision Approach Radar (PAR) and the Passive Point Source (PPS). As a part of the PIP effort, the AN/SPN-46(V) central computer, the AYK-14, will be updated with the significantly faster VPM processor. The VPM will be installed in the radar and in the console eliminating several units. Also, the MK16's will be replaced with the AN/ASN-139 CAINS II units. The MK16's are costly at \$1 million each and are only used to support the AN/SPN-46(V). The CAINS II units are standard airborne units used throughout the fleet. This upgrade should require little additional training for the electronics technicians and should be transparent to the operators.

The PAR is a scaled-down version of the AN/SPN-46(V) (antenna units, radar, CAINS II units and two simplified consoles for control). The PAR is intended to be installed on all amphibious assault ships. The scaled down version meets the Navy and Marine Corp needs of a MODE III landing capability.

The Passive Point Source is a small corner reflector device that will mount on the aircraft's landing gear. This device will provide a point source for radar tracking. Because of its unique signature, the reflector will be small enough not to interfere with aircraft or to be tracked by unfriendly forces.

For more information, contact the ACLS facility at Patuxent River, Maryland, at 301-862-8221.